

*Full Length Research Paper*

# Comparing lifestyles, social support, body mass index and history of menses between Mashhad University of Medical Sciences students with and without primary dysmenorrheal

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Accepted 23 August, 2010

**Dysmenorrheal is a common gynecological disorder in women of reproductive age that causes social, physical, psychological and economic problems. As the risk factors affect dysmenorrheal therefore this study is performed to compare life style, social support, BMI and history of menses between Mashhad university of Medical Sciences Students, with and without primary dysmenorrheal. In this descriptive analytical study and the study population was the female medical students at Mashhad University of Medical Sciences. 200 students were proportionately sampled using a subject selection Form. They also filled out the interview check list, the lifestyle questionnaire and the Cassidy social support form. On specific days, history of menses form was completed. The data were analyzed using SPSS software and chi-square, Fisher's exact, t-test and Mann-Whitney tests. Significant differences were found between the two groups as for the mean sleep: in the group with dysmenorrheal  $8.50 \pm 1.58$  and the other group  $8.50 \pm 1.30$  were mean sleep. Significant differences were found between the two groups as for the Menark age: in the group with dysmenorrheal  $13.33 \pm 1.30$  and the other group  $13.67 \pm 1.30$  were Menark age mean  $12.90 \pm 3.70$  and the other group  $10.2 \pm 2.70$ . Significant differences were found between the two groups as for the amount of menstrual bleeding: in the group with dysmenorrheal 18 subjects the severity of menstrual bleeding and the other group 6 subjects the severity of menstrual were in the menses: Significant differences were found between the two groups as for PMS: in the group with dysmenorrheal 77 subjects PMS and the other group were 50 subjects PMS. Results showed that history of menses affected dysmenorrheal.**

**Key words:** Life style, social support, BMI, history of menses.

## INTRODUCTION

Painful early menstruation is a menstrual pain without the presence of pelvic disease which is one of the common problems in women of childbearing age (French, 2005), This complication is seen in 90% of adults in their cycles (French, 2005; Strinic, 2003). Decrease of progesterone in the end stages of luteal phase cause release of Phospholipases A2 from endometrial and increase of prostaglandin E2 and F2 $\alpha$  especially. Prostaglandins also

cause vasoconstriction and uterine muscles, which were in turn, reduce uterine blood flow and increase ischemic uterine muscle stimulation in pain autonomic disciplines (French, 2005; Berek et al., 2002; Speroff, 2005). Painful menstruation, affects women's health in terms of adverse effects on individual and social community. The main reason that women visit a physician is absence from school, work and reduction in daily physical activity. It is estimated that 600 million hours of work waste annually and it costs about \$ 2 billion in the United States due to the initial painful menstruation. So, today flimsy menstrual pain is considered as a serious problem because of its

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effects on social economic efficiency (French, 2005; Rakel, 2003).

Different methods for treatment of long menstrual pain has been used, including prostaglandin synthesis by which approximately 80% of women with early painful menstrual get relieved. The side effects include gastrointestinal symptoms, nausea, prolongation of bleeding time, renal papillary necrosis, reduced renal blood flow, blurred vision, headache and dizziness. Oral contraceptive pills with side effects of nausea, vascular migraine headaches, hypertension, weight gain also are used for menstrual pain relief, oral contraceptive pills and nonsteroidal anti-inflammatory drugs in 10 to 20% of cases are not effective (Berek et al., 2002; Burroughs and leifer, 2001). Therefore, since the cause of early painful menstruation is the increased endometrial Prostaglandins, the knowledge of the effective factors on painful menstruation treatment is essential. These factors include individual characteristics such as age, education, income, social support, menstrual cycle characteristics such as Menark age, duration of menstrual cycle, duration and amount of bleeding and menstrual bleeding lifestyle including dietary habits, daily activities, exercise, alcohol consumption, smoking and BMI (French, 2005; Strinic et al., 2003; Berek et al., 2002; Speroff et al., 2005; Rakel, 2003). So, the aim of research is to compare lifestyle, social support, BMI and menstrual history in Mashhad Medical Students with and without early menstrual pain.

## MATERIALS AND METHODS

This study is a cross-sectional descriptive-analytic study in regular menstrual cycle. The group without pain had zero degree of pain based on multidimensional speech during the past 6-month. The group with pain had at least 3 menstrual cycle of degree 1, 2 or 3 during the past 6 month. The exclusion criteria were not having any medical illnesses, women illnesses, professional athletes and have not used any birth control pills from 6 months prior to the study. Based on the comparison of means with 95% confidence and 80% of the test power, the sample size was to determined 200 people. The data collected using a personal interview form containing personal characteristics and family life style, menstrual history questionnaire and interview form of multidimensional speech and Cassidy social support form. Cassidy social support form includes 7 questions of social support with responses (Yes = 2, Do not know = 1, No = 0) where the total score 0 - 7 having poor social support, 8 - 12 having medium social support and 12 - 14 having high social support.

To determine the validity data collection tools, we used content validity. The validity of the multidimensional speech has been confirmed by Andresch and Milsom (1982). The validity coefficients of personal characteristics and life style questionnaires were  $r = 0.99$  and  $r = 0.92$ . The validity coefficients of menstrual history questionnaire and social support scale were  $r = 0.92$  and  $r = 0.90$ , respectively. Every day after the end of classes, the researcher completed the questionnaires and form by interview. The students in both groups with and without pain were taught how to fill in the questionnaires. The collected data were analyzed using SPSS software. The Chi-squared, Fisher exact test, t-test and Mann-Whitney test were used for analysis.

## RESULTS

Results showed that the two groups homogeneous with regards to father's occupation, mother's education, social class, family income level are birth order. The study results showed that the majority of subjects (57% in with-pain group and 51% in without- pain group) were in 21 - 23 age group. The mean age of subjects in the group with menstrual pain was  $21.74 \pm 1.66$  compared to that of group without pain which was  $21.68 \pm 1.70$ . Based on Chi-squared test, the two groups were homogeneous in terms of age. Research findings showed two groups studied the mean body mass index (kg m), weight (kg) and height (cm) has no significant difference. The majority of people (79% of menstrual pain and menstrual pain group is 76%) with normal body mass index (25 - 5/18), respectively. There was no significant difference between the groups in BMI (body mass index). The majority of the subjects in both groups (79% in with-pain group and 76% in without-pain group) had normal BMI (18.5 - 25). The Mann-Whitney test showed there was no significant difference between two groups in terms of the distribution of night time sleep (in hours), day time sleep (in hours), satisfaction of sleep, daily exercise (in minutes) and daily walking (in minutes) and a significant difference in total sleep a day (in hours) with  $p = 0.035$  (Table 1).

According to Mann-Whitney test, protein intake, fruits and vegetables, snacks (per week) and tea drink had no significant difference (Table 2). People under study in two groups were homogenous according to the level of enjoyment of social support were equal so that the most people (had high social support) and 59 patients (52% in the group with menstrual pain and 59% of the group without menstrual pain). Mean score of having social support in the group with menstrual pain was  $10.6 \pm 2.8$  compared to  $11.3 \pm 2.2$  in the group without pain. Results showed that in both groups the age at onset of menstruation were significantly different ( $p = 0.02$ ) so that the mean age at onset of menstruation, in menstrual pain group was  $12.70 \pm 1.30$  and in the group without pain was  $13.67 \pm 1.30$ . The severity of menstrual bleeding in the two groups with and without menstrual pain was significant with  $p = 0.03$  (Table 3). In the subjects under study, the mean interval between two consecutive menstrual bleeding and menstrual period are not statistically significant so that the mean menstrual cycle were, respectively,  $28.1 \pm 2.70$  and  $27.6 \pm 4.70$  in with-pain and without-pain groups. The mean duration of cycle bleeding were  $6.06 \pm 1.04$  and  $6.0 \pm 1.08$  in with-pain and without-pain groups, respectively. Based on chi-square test, the two group under study were significantly different in terms of premenstrual syndrome ( $p < 0.001$ ).

## DISCUSSION AND CONCLUSION

Results showed the mean age at onset of menstruation

**Table 1.** Comparison of the distribution of sleep time per day, sleep at night and sleep a day (in hours) and duration of daily walking exercise daily minutes (to separate groups).

Variable	With menstrual pain mean $\pm$ SD	Without menstrual pain mean $\pm$ SD	Mann-Whitney test result Z score (p-value)
Sleep at night time (in hours)	6.99 $\pm$ 1.4	6.78 $\pm$ 1.12	1.4(0.25)
Sleep in daytime(in hours)	1.52 $\pm$ 1.31	1.27 $\pm$ 0.83	1.23(0.21)
Sleep in a day (in hours)	8.5 $\pm$ 1.58	8.05 $\pm$ 1.30	2.10(0.035)
Daily Exercise (minutes)	3.53 $\pm$ 9.40	3.75 $\pm$ 12.83	0.77(0.44)
Daily walking (minutes)	54.75 $\pm$ 42.41	54.40 $\pm$ 43.23	0.22(0.80)

**Table 2.** Comparison of the consumption of protein, fruits and vegetables, snacks and tea in two groups.

Variable	With menstrual pain Mean $\pm$ SD	Without menstrual pain Mean $\pm$ SD	Mann-Whitney test result Z score (p value)
Number of protein consumption per week	6.4 $\pm$ 2.4	7.12 $\pm$ 2.91	1.60(0.10)
Number of fruits and vegetables consumption per week	5.7 $\pm$ 3.8	6.39 $\pm$ 4.15	-1.96(0.33)
Number of snack per week	2.62 $\pm$ 2.76	3.5 $\pm$ 3.7	-1.96(0.33)
Number of cups of tea per day	3.8 $\pm$ 2.1	3.7 $\pm$ 2.2	-0.01(0.99)

**Table 3.** Distribution of subjects according to the severity of the frequency of menstrual bleeding.

Severity of bleeding	With menstrual pain frequency (%)	Without menstrual Pain frequency (%)	Total frequency (%)
Low	6(6)	8(8)	14(7)
Medium	76(76)	86(86)	162(81)
High	18(18)	6(6)	24(12)
Total	100(100)	100(100)	200(100)

$$\chi^2 = 6.90 \quad p = 0.03.$$

In two groups is significantly different ( $p = 0.02$ ). Basirat and Ahmadi (2007) showed that the age at onset of menstruation has a significant relationship with menstrual pain ( $p = 0.05$ ). Balbi et al. (2000) showed that pre-menstruation increases the incidence and severity of painful menstruation. Strinic et al. (2003) showed that the age at onset of menstruation in girls with and without menstrual pain has no significant difference. The cause of this difference can be justified by that usually "Women who have menstrual bleeding without ovulation (lack of progesterone) are not affected by early painful menstruation. Ovulation cycles regularly begin after 2 - 5 days of the start Menark. Results of this study is consistent with Basirat and Ahmadi (2007); Balbi et al. (2000).

Results of this study showed that the severity of menstrual bleeding was significant in the two groups  $p = 0.03$  which is similar to the findings of Balbi et al. (2000); Latthe et al. (2006). We found that the BMI, social

support, lifestyle (sleep a day, daily physical activity, consumption of protein, fruits, vegetables, snacks and tea drink per week) except for daily sleep were significantly different in two groups  $p = 0.035$  is consistent with other studies. Balbi et al. (2000) showed that low intake of fish, eggs and fruits are some factors affecting menstrual pain. In the present study the number of protein consumption was considered, but Balbi considered the type and the amount of consumption. Based on the results of this study, menstrual cycle characteristics are effective on the incidence of painful menstruation. It is proposed that the study should be performed in a wider population with larger samples through a prospective longitudinal study.

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